## **CLAIMS**

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What is claimed is:

- A method of constructing a / lookup table of modes 1. encoding data for transmission in a wireless communication channel from a transmit unit to a receive unit, said method comprising:
  - selecting at least one quality parameter of said data a) as received by said receive unit;
  - determining a first forder statistical parameter of b) said at least one quality parameter;
  - determining a second-order statistical parameter of C) said at least one quality parameter; and
  - arranging said modes in said lookup table based on d) said first-order/statistical parameter and based on said second-ordet statistical parameter.
  - 2. The method of claim 1, wherein said first-order parameter said second-order statistical and statistical parameter are determined from a simulation of said wireless communication channel.
  - 3. The method / of claim 1, wherein said first-order statistical said second-order parameter and statistical parameter are determined from a measurement of said wireless communication channel.
  - 4. The method of claim 1 further comprising:
    - selecting a communication parameter;

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3	6.15	b)	setting a target value of said communication
4	~~\ ~\>		parameter; and
5		c)	arranging said modes in said lookup table based
6			on said target value.
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1		5.	The method of claim 4, wherein said communication
2			parameter is selected from the group consisting
3			of bit error rate, packet error rate, data
4			capacity, signal quality, spectral efficiency and
5			throughput.
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1		6.	The method of claim 4, wherein said communication
			parameter is /a statistical communication
1.13			parameter.
14 134			
4 1 2 3 4 1 2 2 3 4 1 2 2 3 4 1 2 2 3 4 1 2 2 3 4 1 2 2 3 4 1 2 2 3 4 1 2 3 4 4 1 2 3 4 4 4 1 2 3 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4		7.	The method of caim 4, further comprising:
≒ <b>⊍</b> ≒₫2			a) measuring a measured value of said
¥ 1 3			communication parameter in said wireless
14			communication channel;
<b>L</b> ∏5			b) assigning an adjustment to at least one of
3 4 5 6			said first-order statistical parameter and
7			said second-order statistical parameter
8			based on a difference between said measured
9			value and said target value.
10			
1	8.	The	method of ctaim 1, wherein said quality parameter
2		is a	short-term quality parameter.
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- 9. The method of claim 8, wherein said second-order statistical parameter comprises a variance of said short-term quality parameter.
  - 10. The method of claim 9, wherein said variance is selected from the group consisting of temporal variance and frequency variance.
- 11. The method of claim 8, wherein said short-term quality parameter is selected from the group consisting of signal-to-interference and noise ratio, signal-to-moise ratio and power level.
- 12. The method of claim 1, wherein said first-order statistical parameter comprises a mean of said at least one quality parameter.
- 13. The method of claim 1, wherein said second-order statistical parameter comprises a variance of said at least one quality parameter.
  - 14. The method of claim 13, wherein said data is transmitted at more than one frequency and said variance is a frequency variance.
  - 15. The method of claim 13, wherein said data is transmitted in a multi-carrier scheme and said variance is a frequency variance.

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16.	The method	of claim	13,	wherein	said	variance	is
	a temporal	yariance.					

- 17. The method of claim 1, wherein said transmitting step is performed in accordance with a transmission technique selected from the group consisting of OFDMA, FDMA, CDMA, TDMA.
- 18. A storage medium tangibly embodying a lookup table of modes for encoding data for transmission in a wireless communication channel from a transmit unit to a receive unit, said storage medium comprising instructions for:
  - a) selecting at least one quality parameter of said data as received by said peceive unit;
  - b) determining a first-order statistical parameter of said at least one quality parameter;
  - c) determining a second-order statistical parameter of said at least one quality parameter; and
  - d) arranging said modes in said lookup table based on said first-order statistical parameter and based on said second-order statistical parameter.
  - 19. The storage medium of claim 18, further comprising instructions for:
    - a) selectin $\phi$  a communication parameter;
    - b) setting a target value of said communication parameter; and
    - on said target value.



- 20. The storage medium of claim 19, further comprising instructions for:
  - a) measuring a measured value of said communication parameter in said wireless communication channel;
  - b) assigning an adjustment to at least one of said first-order statistical parameter and said second-order statistical parameter based on a difference between said measured value and said target value.